☰

ACHIM SZEPANSKI 2024-03-24

JONATHAN BELLERS`S WORLD COMPUTER – THE AUTOMATIC HORROR OF LIQUID SUPER-WORLD-CAPITAL

ECONOFICTION, MASHINES

CAPITAL, DERIVATIVE, FINANCE, IMAGE, INFORMATION, MARXISM, PLATFORM

Information is a central concept for Jonathan Beller's book World Computer. For Beller, the drastic increase of information implies the possibility of concluding a derivative contract on any phenomenon, which does not mean anything else than that the existence of information is linked to the financialized calculation of probability and thus of risk and uncertainty. For Beller, information has become a derivative of reality, but its importance exceeds that of reality. Moreover, the algorithm becomes a management strategy for social differentiation introduced by and as information.

The decisive factor here is the integration of information economics into financial economics and its knowledge repertoire, so that financial transactions without information processes, the market as a controlling and calculating computer, enriched by cybernetic feedback loops and thus functioning, become simply unthinkable. It was, of course, in the neoliberal discourse of Friedrich Hayek who conceived the market as a computational control process in which price signals are essential and contain the crucial information that leads to a fluctuating equilibrium and the reproduction of the market economy via ongoing correction through feedback loops. Beller also mentions Hayek, who anticipates the economy's algorithmic optimization as the exclusion of the semantic and calls the market economy a telecommunications system set in motion by what he conceives as an effective price signal. The price condenses economic complexity into a single number. Simultaneously, all social signals are integrated into the "telecommunication" of the price signal, which is itself "content-indifferent." Beller claims that such content indifference depends not only on monetary abstraction but on a matrix of abstractions, be it commodity abstraction, race abstraction, or gender abstraction.

Price signals and information processing mutually reinforce each other in automated processes. Beller addresses Boolean algebra and pattern recognition in this context, which, as a result of the algorithmic execution of socially derived information, promote a pervasiveness of the world and shatter older social narratives and domains of knowledge, enabling the placement of contingent claims on any financially economic tranche. He asks rhetorically: how much does it cost to ship a slave? What are the insurance policies for slave traders? Predictive policing? For racist capitalism, being black becomes a junior tranche. Yes, the "global South" becomes a junior tranche, the lowest tranche of a security (subprime), the one that is also considered the riskiest. The brutal "divide and conquer" approach is based on a continuum of separation that accompanies the racist capitalist pursuits of settler colonialism, factory barracks, camps, workplace "alienation," and Debord's Spectacle. It has the fundamental effect of isolating certain phenomena and placing value on events.

For Beller, the distinction between signal and noise is primarily a matter of political economy and its racism. Noise is a source of volatility and its elimination, from the perspective of communication theory, a technical matter. On the other hand, Beller sees it as a matter of politics and economics, with the elimination of noise corresponding to the "suppression of people." In financial terms, volatility is, in turn, an expression of decision-making sequences in price discovery under conditions of uncertainty. It is ironic, Beller argues, that volatility has become an important source of value creation, synthetic finance, and today, sovereigns.

In this context, Beller mentions Nick Dyer-Whiteford's remark that capital has always been a computer, and he conceives of the world computer as the sub-start of a history of commodification (and capitalization one would have to add) of life, or as a process of translating the myriad qualities of the world into quantities. Currently, the money-like nature of affect – visible as "likes" that treat attention and affect as currency – is symptomatic of daily life's financialization (see also Randy Martin). The colonization of semiotics by racist capital has rendered obsolete all "democratic" modes of governance except those that serve the violent purpose of extracting surplus labor profits.

Beller thus already summarizes the main points of his study:

1. Commodification initiates the global transformation of qualities into quantities and gives rise to the world computer.
2. "Information" is not a naturally occurring reality, but the expression/ideality of a price, and it is always a means to influence the price of a possible or actual product.
3. Beller rewrites the general formula for capital, G-W-G': G-I-G', where I stands for information.
4. Attention, cognition, metabolism, and life converge as "Informatic Work," the purpose of which for capital is to intensify state changes in the universal Turing machine that is the world computer.
5. Today, semiotics, representation, and categories of social difference function and work as financial derivatives.
6. Only a direct confrontation with the lifeworld's computational colonization through a reprogramming of the material processes that have hitherto constituted reel abstraction can offer the way out of racial capitalism.

Beller further speaks of an analytical, computational racial capital that functions with the racial abstraction and formalizes a code that serves as an operating system for the virtual machine referred to as "the world computer" that inscribes itself into bodies and everything else. "Computational racial capital" is a heuristic means of bringing forth an analysis of the convergence of what appears to be universal on the one hand, namely the economic, abstract, and machine operating systems of global production and reproduction, and what sometimes appears to be particular or even incidental on the other hand, namely racism, colonialism, slavery, imperialism, and racialization.

The world computer inscribes what Cedric Robinson understands as "civilizational racism," which for him plays a central role in the development of capital as axiomatic, deep into capitalist calculation and its inner machinery. "Computational racial capitalism," Beller argues, should be understood as the generalization of computation and as an extension of capital logic and practices. In this context, the computation must not be understood as a mere technical phenomenon but as the practical outcome of an ongoing and bloody struggle between capital and the proletariat. (Undoubtedly, capital was and is not the only organizational force that gives form and system to inequality; racism is also "civilizational," as Cedric Robinson says).

The racial logic of calculation must be analyzed, whether in terms of finance surveillance, population management, policing, social systems, social media, or in the protocols that use difference for capitalization. The instance of computation, a specific 1-or-0-logic, may appear value-neutral, as a matter as indifferent as lead for a bullet or uranium for a bomb. Still, it functions as the modality of a world system. Computation ultimately emerges as the result of these struggles.

If information is neither matter nor energy, just as there is no atom of matter in value, as Marx says, then value/exchange value like information (unlike in Wiener's naturalistic definition of information) is an index of a social relation, indeed a historical event. Value indexes "abstract universal labor-time." Beller argues that the common distinction between the social basis of exchange value and the universal character of information needs to be reconsidered. Today, information is understood as a technological, selective event characterized by the displacement of its social dimension. Here, Beller refers to Sohn-Rethel's notion of real-abstraction, which is meant to show that the abstractness that takes place in exchange itself

and is reflected in value finds an identical expression, namely in the abstract intellect or the so-called pure understanding of scientific knowledge. Following Sohn-Rethel, Beller says that information is in our machines and our knowledge. Not an atom of matter enters into information, although it needs matter and energy for its production, like value. With Sohn-Rethel's quite debatable concept of reel abstraction, we have already dealt on NON (see non.copyriot.com) many times. Here we follow the critique of Frank Engster, Oliver Schlaudt, and John Milios. First, the generalization of the term for different modes of production is questionable. To derive the forms of thought from the exchange of commodities mediated by money and from the reel abstraction supposedly inherent in it presupposes what is actually to be derived. The forms of thought result from the exchange mediated by money, with which the reel abstraction is indicated. But the problem of the mediation between exchange and form of thought is only named so that Sohn-Rethel must interpose an act of identification, reflection, and inversion between commodity form and form of thought, in order to arrive at a specific level abstraction of thought.

In the context of information, both Beller cites Bateson, who speaks of a difference that makes a difference. Beller locates this abstraction process in the reel abstraction of money, which is indifferent to particular qualities and provides the key to content-indifferent abstractions of various kinds. For Beller, information functions as the extension of a monetary calculus that indicates the increasingly abstract character of social relations and social requirements. It is a calculative fabric of abstraction that, through its coordinated capillary action, orchestrates social practice and offers an interface for the reception of value production.

As for Marx, there is no single atom of matter to be found in value. For Beller, no single atom of matter can be found in information. Value is the socially valid informing of matter. And as a discrete state of matter embodying value as a network of commodities mediated by markets and bound to labor, the discrete state machine computer thus historically exists, while exchange value/value leads precisely first to computable information and then to computation itself, which thus becomes interoperable. But even before the advent of information proper, exchange value/value operates as information (and thus necessarily as information processing) and later as synthetic finance and contemporary forms of computer-mediated accounting. Computation is the extension, development, and formalization of the calculus of exchange value, and in thought and practice becomes a command-control level or level of control for the management of the profitable calculus of value. As such, information is the calculus of money itself and is inevitably tied to abstract labor time and thus to racial capitalism-

The monetary quantification process always requires a sufficient return on investment. Such rationality is now rigorously applied to both human and human-machine processes in the context of intensive development of metrics and accounting systems. This development of vertical and horizontal systemic integration must be understood as a "computational mode of production." It optionalizes and optimizes capital accumulation, translating social processes into derivatives or financial positions to be invested, structuring risk in terms of volatility of valuation. LiPuma, in particular, has provided impressive results on this in his recent book. Thus, a direct relationship between cybernetic-social processes to finance has been accomplished. Following Randy Martin's understanding of everyday life's financialization and

the social derivative, Beller refers to these processes as the derivative condition. The ramifications of the price system and its complexity in and as synthetic finance implies the addition of informatics to the banking, credit, and financial system, which allows everything possible to be monetized (that is, everything that counts or can be counted by capital) and integrated into risk assessment as a mode of accounting in the form of credit scores, interest rates, and liquidity premiums. For Beller, information itself transforms into a capital asset; indeed, information is a form of money. Its operations by means of quantification, processed through sociality and through what is understood as computation (ubiquitous computing), ramify all notable social phenomena with ever-increasing resolution and granularity to the present day.

As a result of this programmatic abstraction, calculation as monetization and monetization as calculation possess a totalizing and universalizing tendency in global and local markets of all kinds. But the entire process and its processing nonetheless remain materially bound to the qualitative, concrete specificity that is processed around the clock. For Beller, the scaling of reel abstraction in capitalism, its formalization in the material process that includes institutions and computing machines, never exhausts difference or annihilates conflict, even as it cuts off the noise, reduces variance, and makes objects, money, commodities, and people commensurable and fungible. For Beller, information is, in fact, equal to financialization, i.e., a response to the systemic necessity of racialized capital to configure new assets and assess risks in perpetuity in order to quantify and informatize knowledge, semiotics, and sociality in order to capture these components for production.

Beller writes:

In theorizing hyper-realityhe (Baudrillard) almost could have written, "All that is, vsolid melts into information." Computability liquifies the solid in accord with the requisites of capital. Just here in the informatic flux, we can see, alongside its vast achievements, computation's intimate link, in the alienation of the territory by means of the map, to the colonial project, the industrial project, and globalization in the derealization of traditional forms of space and time. Capital's ability to infiltrate, organize, and predict, to simulate a model and to impose it, to abstract and to subsume difference in accord with its own code (and, where necessary, to generate difference and distinction to serve the expansion and development of this code), to operationalize and then self-optimize, provided and continues to provide the conceptual, material, and existential basis, along with the urgency, for the further development of computation. Tragically, it also provides the urgency to transform its process, its processors, its processing."

Like an invisible hand with infinite digits, which is information itself, the universal generalization of the world computer heralds an ever more granular accounting, whereby, as a consequence of this socio-cybernetics, a calculus of risk and reward now accompanies all knowing and all unknowing. Information serves as an instrumental proposal for the universality of calculation and accountability; it serves as the medium of calculating racial capital – the means of generating and discounting a future income stream by means of a cybernetic interface that communicates with any phenomenon. The rest is technology, or, more precisely, the abstraction and reification of social relations and their sedimentation and automation in machines. Despite the somewhat shocking admission that "information is

information, not matter or energy" (Wiener), information has been mistakenly interpreted as an effect of the mere or sheer existence of things, as an ontological component of things. On the other hand, Beller assumes that information is a reel abstraction, a consequence of what people have done and are doing when they produce and exchange commodities when they historically assemble matter to combat the falling rate of profit. Information, then, is not, as has long been claimed, a natural property of things, but an extension of the logic of property, a social event, a capitalizing mode of knowledge and action that functions today as a derivative instrument tied to an underlying value-a generalized means of pricing that inheres the processing of a risk in a field of contingencies. Information appears again a reel abstraction, an essential practice of capitalist production (and circulation, at least, one would have to add); it is a means to price.

The ramifications of computational codification, generated by sociological metrics, financial accounting, and racial abstraction, leading to the "computational mode of production," have transformed the social body. With it, almost all semiotic activity, into a distributed, computational factory. Within this planetary factory floor, which as a result of the world computer and its screens has become the same everyday life, we encounter an unprecedented expansion of the colonization of space, time, discourse, and the imagination by means of the flow of algorithms. For Beller, all world computer inhabitants are now cybernetically integrated into a competition for liquidity mediated by machines. The world computer hypostasizes the operations of racist computational capital, which sets machine efficiency against the socius, and casts the integrated operations as a vast machinic assemblage mediated by reel abstraction (information). The world computer nevertheless thrives precisely on the production of difference and differentiation to produce more and more of the same: Wealth and dispossession, that is, more wealth and more dispossession. Its algorithms and algorithmic effects seize upon all forms of historically reworked social difference for arbitraging labor power and power by occupying, configuring, and formatting technologies and machines in the name of efficiency.

Lazzarato has pointed out that, in contrast to the automated machines Marx found, cybernetic machines are a new mode of existence, a relation, and multiplicity of relations, a relation to its own components, to capital, to other machines, to the world, and to people. In this, people and machines are not defined entities but are involved in machine complexes, whether in their actualized or virtualized components, and they are always in relation to war machines. If machines are relational, then they always possess a moment of indetermination. They are not, as Marx still assumed, nothing more than dead labor, but capable of differentiated processes of individuation (Simondon) (precisely today above all of the connection to the war machines of capital). Even the cybernetic machines constantly need social components such as decisions, bureaucracy, inscriptions, and technocrats, which in turn cannot be detached from the political ambitions of the war machines of capital. Lazzarato writes in his new book C*apital Hates Everyone:* "The politicians, technocrats, journalists, military personnel, experts, fascists, etc., constitute the subjectifications of the mega-machine; they intervene as regulators, guardians, servants, restorers of the great flow of money, capital, technology, and war, but also as "governors" of the divisions of sex, race, and class, guarantors of the enslavements and subjugations implied by these divisions."

The automaton is not automatic in itself, neither as capital nor as machine. Or, to put it more precisely, if the machine is automatic, it has been reduced to that by capital.

Such a relentless, globally integrated calculus requires constant data visualizations. And many formerly extra-economic activities, such as superintendence as the watching of machines and the setting of protocols that produce the machines so that their operations can be valorized, are now value-productive for capital. Oversight has become more complex since capital has been forced to supervise machines around the clock, and this includes precisely what is now called "visual culture." Since the advent of what Beller calls the cinematic mode of production, we are watched by the very machines we observe. By some, we can neither observe nor see social codes are written that allocate rights and access, that involve forms of ownership and citizenship, and that also license violence, ensure impunity, and enforce genocide through networks. In ten thousand or a million ways, we monitor and are monitored. Capital is, among other things, the processor of our time and times, of our thinking, of our metabolic unfolding in terms of information – it produces our cyborg-being, which results in our "being" just as it is.

Capital, Beller argues, is the metabolism of value, while the calculation of metabolism is information. Value mediates social wealth, while information mediates the cosmic, with the cosmic remaining known through the space of the social and involved in the sociality of wealth.

The unity of value and information appears for Beller with the concept and capabilities of computation and can be evidenced with the concept of computational capital. This concept then provides explanations for the capacity of processes by identifying them. Information is a means of capitalization is, or to put it bluntly, capital and computation are not two things for Beller, but they are one, as they can no longer be considered separately in practice. Consequently, when Beller speaks of apparatuses that record information, he refers to the totality of their infrastructure, their history, and their cybernetic integration into human practice.

Computerization is to finance capital what reel abstraction (money) is to Sohn-Rethel for the social act of exchange. Here, the reasonably calculating computation constantly writes new options onto reality. Derivatives, it turns out, are elaborate and structured schematizations of liquidity risk, which in most cases stands for financial imponderables that, for Beller, arise in the very process of commodity formation (production and consumption). Why would one have to ask Beller, not in financial markets, as self-referentialities themselves? The financial derivative allows an asset or bundle of assets to be broken down to sell its various components piecemeal, making it possible to structure and trade risk without owning the underlying asset itself. See here our detailed research on Non and in our books. Risk management can now be done by a specialized cartel of market makers offering specialized products – executable contracts of a new kind. Derivatives formalize, quantify and manage contingencies that exist as liquidity, and they are now effective everywhere, both in a formal way as financial instruments and in an informal way as advertising and social media currencies of affect such as likes and votes. Nevertheless, it is precisely here that the differences would need to be examined.

Through a process Robert Meister defines as collateralization, risk packages can be rigorously traded and take place as "bets" on events' contingent outcomes. We have doubts about the notion of a bet; see our comments in the books on capitalization. Derivatives, then, are liquidity premiums that, in principle, provide profitable exposure to the upward trend of any asset while limiting downside risk by clearly structuring the exposure. For us, derivatives are a form of speculative capital itself. For Beller, the financial derivative is only the most obvious form, which culturally is a general case in terms of accelerating the computational calculus that iterates recursively and consequently induces volatility,

In this context, Beller mentions Jean Baudrillard and his theory of simulation, which intoned at the time that abstraction was no longer that of the map, the double, the mirror, or the concept, no longer that of a territory or a referential being or substance, but involved generation through models of a hyperreal without origin or reality.

Simulation takes place when a representation precedes the real of which it pretends to be a representation; it produces this real as reality itself instead of modelling a pre-existing reality. The more the simulated reality resembles an existing reality, the less it resembles it. If both realities are exactly the same, the simulated reality is no longer a reality, but a different original. The gap that is necessary to distinguish between copy and original has therefore disappeared. Actually, the representation system can only function on the basis of a gap between representation and reality, but as soon as the gap has closed and the system has lost contact with reality, it has to produce its own reality in order to continue functioning. This real is what Baudrillard calls the hyperreal, the more real than the real, and Baudrillard calls this process, in which the representation produces its own reality, simulation. In the process, referents or other realities continue to be produced as alibis. Baudrillard's analysis takes place both at the level of the explanation that simulated systems give themselves (descriptive) and at the level of their own analysis. The simulation does not renounce the real, but attempts to realise it as reality by capturing it in its own system of representation. In hyperreality, therefore, we have not moved too far away from the real, but too far towards it. There is also a confusion between simulative models and their referents, which leads to epistemological nihilism. Each theory produces its own reality, and there seems to be no independent reference by which one theory could be judged better or worse than another. Simulation thus leads to a relativism of all theories, whereby the difference between binary oppositions also disappears. With simulation, systems become reversible, all hypotheses are equally plausible, and counter-hypotheses merely serve to support the system of simulation. Truth must be proven by scandal, the law by transgression, work by strike, the system by crisis, etc. On the one hand, the simulation thus strengthens the economy by giving this system the hegemony to take over all antagonisms, and, on the other hand, the simulation is an internal deconstruction of the system of meaning on which the economy is still based.

For Beller, in theorizing hyperreality, Baudrillard could have written that solid material becomes liquid and melts into information. It is precisely computability that liquefies the solid into a ubiquitous informatic stream in accordance with the requirements of capital, which still operates the liquefaction of territory and indicates its simultaneous partnership with the colonial project, the industrial project, the globalization, and de-realization of traditional forms of space and time. It explodes the capacity of capital to infiltrate, organize, and predict

everything possible, to simulate and impose a model, to abstract, and to put difference in accordance with code. Computing itself should be understood as a strategy of efficient risk management and cost-benefit analysis, identifying new ways to allocate resources and considering new sites' potential profitability.

Currently, Lazzarato has objected to Baudrillard's simulation thesis that the real, which cannot be anticipated or shut down even by an infinite network of computers, is by no means disappearing but is constantly reemerging in a series of eruptions, new fascisms, and revolts.

In the "cultural" spaces, the representatives of the same (a.k.a. subjects) now offer themselves as profiles or brands, marketable not only in themselves but also as derivative exposures to their recipients, namely their audiences, networks, assets, and currencies. I "friend" you to add you to me and to add your network to my portfolio. I am an "influencer." Culture, understood here as a semi-autonomous entity, supposedly separable from materiality and technology, today can only be another case of surrogate of platforms because the generalization of computing means that culture as a link and as a communicative fabric of the socio-semiotic is increasingly subject to the granularization and grammaticalization of commodification on the "object" side (and its other aspect, the fractalization of fascism on the "subject" side), which amounts to racist and socio-cybernetic bioengineering. Thus, for Beller, "culture" today is an expression of general informatization of social relations that are consistently subject to a historically enforced predictability; it is derivative.

Postmodern culture, for Beller, is to be understood as production and as calculation, always requiring machine networking established by machines, including the discrete state machines and infrastructure that support them (fixed capital): Marx's "giant automaton" in the form of the world computer. Whether they involve epistemological transformations or are simply expressions of opinion about opinions, cultural practices are now sui generis computer-mediated and parametrically enacted, with "human" inputs subsumed as necessary and surplus labor in the calculus of production cycles. With the computer, writing is no longer typing but proto-typing.

In this context, Beller speaks of new platform sovereignty (Bratton), algorithmic governance, or metadata society (Pasquinelli), indicating that information itself has (or actually is) value and is only valuable within the framework of computation. A new computational infrastructure that is primarily fixed capital emerges in conjunction with the myriad phenomena that are now treated informatically, i.e., the presence of "information" includes computation as a mechanism of perception and organization, which in turn requires racialized capital as a meta-machine and architecture of the current social system of account management.

The financialization of everyday life, studied in detail by Randy Martin, structures representation and valuation and led to the "informatization" of the senses. Ontology here is still merely an artifact of data visualization, an inscription, an act of writing, and a speech act, and therefore never a neutral endeavor. When Beller writes of simulation deconstructing objects into patterns of distribution and making us skeptical about who or what is present, both objectively (how we view the perceptible) and subjectively (within ourselves as consciousness), this rather points to the deontologization of capital that we have analyzed at length. Ontology tends to philosophically overdetermine the theory of capital. For example,

when Frantz Fanon writes that ontology does not allow us to understand the being of the black man, ontology, even when conceived as deconstruction, similarly does not allow us to understand the "being" of financial capital.

Platform companies like Facebook now profit from anything, and everything said or photographed on them, and this is only the most obvious case in a system where representative media have been hijacked and subordinated to wholesale through computer logistics. By reversing the priority between world and data visualization, the digital simulation of the world as concepts encoded in apparatuses reveals the encroachment on the protocol level of computation and raises the pointed and possibly still a political question of what is left of so-called humanity beyond the reach of a now fully financialized knowledge. This perhaps borders on Laruelle's question of the human-in-the-last-instance.

The vectors for the evolution of social difference are formalized by and as algorithms that then act as financial derivatives: Risk management strategies that, on the one hand, allow capital to securitize and rely on the aggregation of differences in synthetic products such as mortgages, insurance, securities, and other forms of debt and credit, and, on the other hand, make it possible to deploy military, police, and surveillance technologies designed to control differentially marked populations for the purpose of capital preservation.

Another important thesis of Beller is that modern computation is not only constitutive of capital, but that computation, although characteristic of certain forms of thought and recognizable as such, also stands for the unconsciousness of modern thought, or, to put it differently, the content-indifferent calculus of computational capital also processes in the absence of a conscious, subjective perception of its operations. Indifference (to the contents of production and the nature of the products) is therefore not a psychological phenomenon but an objective and, at the same time, subjective condition of the operations of capital. All productions seem to be the same as long as they are efficient and can be subjected to the criteria of quantification and calculability. Therefore, it is not surprising that software technicians do not want to know anything about the productions themselves, which, after all, have no content for them; rather, it is only a matter of having done one's job well and following the orders of higher management. Lazzarato writes in his new book: "The capitalist organization of labor produces potential criminals who, like the Nazis during the Nuremberg trials, won't feel responsible for the outcome nor for their involvement in the "production," because for them, as for capital, all productions are the same, so long as they are efficient, rationally organized, and they meet the criteria of quantification and calculability. Like the Nazis, everyone will be able to repeat: "We have done our job," "We have followed orders." They act in and for the war machine of which they are both the actors and the victims. This is not a sleep of reason that produces monsters, but the "peaceful" organization of labor crossing another threshold in the social construction of nihilism."

As the domain of the unconscious, Beller writes in reference to Lacan, computation is structured like a language, more precisely as a computer language, which is inevitably an economic calculus. The 'Computational Unconscious' is fixed capital, externalized and sedimented into discrete-state machines whose programs and programmable environments, though numerically constituted, nonetheless carry elements of racialized abstraction and gendered abstraction. The computer code of the deterritorialized universal capital factory and

its silicon-powered screens blur the structural inequalities that affect capitalist categories of production and race, class, gender. They are thus operationally disappeared in our machines.

Beller speaks of the computer as an abstract machine which, like all abstractions, has developed out of concrete circumstances and practices; it is an idealization of the reel abstraction on the basis of a practical consummation. This again in reference to Sohn-Rethel's notion of reel abstraction. These abstract machines release potentials that, due to the connection of codings with material flows and the short-circuit of communication and control, can be actualized at any time in diverse concrete machine assemblages: in doing so the abstract machine is by no means power-neutral; rather, it creates ongoing potentials for the formulation of programs in order to operate the structuring of even still antagonistic power constellations and to be able to make their actualizations possible.

However, Beller then further refers to an outside, although the socius's historically materialized digital infrastructure permanently thinks in and through us. The unthought and unthinkable as an externality of calculation is nevertheless a necessary addition. The impossible, the ephemeral, the socially dead, the colonially, or informatically erased continues to haunt the dominant simulation of life and being.

For Beller, the question of computation is closely linked to the cinematic mode of production. In this, he refers to Vilém Flusser, who understands the camera as a black box that is a program; consequently, photography or the technical image establishes a "magical" relationship with the world, insofar as people understand photography as a window to the world and not as conceptually organized information, created by technical concepts. This means that the technical image itself, along with its disruption of linear time and its dissolution of logical thought, acts as a program for the bios, and it suggests that the world has long been perceived unconsciously through computation and the technical image. If then the computational processes of photography are themselves an extension of the universal digitization of capital logic, then this calculus has done its work in the visual reorganization of everyday life unconsciously for humans for nearly two centuries. In other words, thinking – numbers expressed in numbers and materialized in machines – automates thinking as a program. The program, for example, that of the camera, functions as a historically produced version of what Katherine Hayles has called "unconscious cognition." Technology (and thus perception, thought, and knowledge) can only be separated from the social and historical-that is, from racist capitalism-by eliminating both through its own operations.

The assemblage of the ecosystemic diversity of cultures, languages, histories, and life forms into a single digital substrate is based on innumerable acts of violence. Beller calls this the violence of abstraction, which renders interchangeable what was once differentiable and leads to transforming computational calculus into a financial derivative, a position on the future. In this context, humanism for Beller is colonial software, and the colonized are and have been its outsourced providers. This platform-humanism is not so much a metaphor. Rather it is a tendency that is perfectly realized by the current platform posthumanism of computerized capital. If "the anatomy of man is the key to the anatomy of the ape," as Marx eloquently put the telos of man, Beller asks, "Is the anatomy of computation the key to the anatomy of 'man'?" At the same time, it is important to note, with Frantz Fanon, that the people of the so-called Third World have, in a sense, built the European metropolises. Beller writes:

“First reduced to the Wizard of Oz on the gold standard, and now reduced to a naked, Tweeting, orange clown on the digital finance standard, in the digital revolution the human figure has lost its pizzazz.”

In many cases, human beings themselves have become an obstacle to production; they are no longer a sustainable form. Hooray for the dividend, writes Beller, and we refer here to our detailed discussions of the term borrowed from Deleuze/Guattari. As a sign of the times, posthumanism indicates, on the one hand, the disappearance of supposed ontological protections and quasi-religious legitimizing thought. On the other, it represents the preservation of a modality of dehumanization and exclusion that legitimized and normalized white patriarchy by allowing its values to present themselves as technological (and cultural) universals. Beller goes even further, writing that people became fodder for statistical machines and that as Edwin Black has shown in relation to the Holocaust, the development of this technology was inextricably linked to racism and genocide.

It is well known that Claude Shannon proposed a general theory of communication that was indifferent to content – a statistical, mathematical model of communication, while at the same time considering all specific content as irrelevant to the method of transmission itself. Like use-value under the management of the commodity form, the message became an adjunct to the code’s exchange value. Beller insists that the rules for content indifference were derived from both specific content and a specific form of indifference and that the language used as the default referent was always a culturally specific use of language. Shannon’s de-privileging of the referent of logos as referent and his attention only to signifiers meant an intensification of the slippage of the signifier from the signified (Shannon developed a reconceptualization of language as a code (sign system) and as a mathematical code (numerical system). This erasure of the real (being, subject, and experience) from codification enabled Shannon to make the mathematical abstraction of rules for the transmission of arbitrary messages the industry standard, even though this meant the dehumanization of communication – its separation from the history of people. However, the history of people continues to haunt the mathematical theory of communication – another meaning of the computational unconscious.

The movement from image to code and back to a transformed image (image-code-image′) replaces the “C” that stood for the commodity in Marx’s general formula of capital, with commodity production for wages mediating the movement from money to more money. Beller begins his rewriting of Marx’s famous capital formula M-C-M’ with the introduction of the selfie. He also understands the resulting attention aggregation effect as a symptom of fractal fascism. The selfie is a bet, a projection of one’s human capital (Foucault) as a digital object offered on the market of attention. The screen interface is thereby decisive for what appears and what does not appear. It indicates the conversion of one’s life energy into information to accumulate more information, which in turn is produced by the attention of others. Additionally, this total relationship between image and code can itself be abstracted as information (I), and thus Beller rewrites the general formula for capital as M-I- M′.

For Beller, one result of the economic and computational convergence that evidences the rise of visual culture in parallel with the rise of modern credit and synthetic finance is financialization and, for example, the derivative development called the selfie: a specific mode

of the calculus of commodities in the midst of a new calculus of commodities. For Beller, the commodity, like precisely the selfie as well as the image in general, is a contingent claim, a derivative whose underlying value is value itself.

The accelerated mathematics of capital, which has long mapped and then generated reel abstractions (the basic money form, but also more advanced forms of money), implies the real accounting of social practice that requires the contingent yet continuous hypostasis of networks. The screen image has become the paradigmatic means by which capital processes the bioprocesses of its programs, although the corporate-sponsored state, with its law, police, military, borders, walls, and banks, continue to play a role as medium and screen infrastructure. Beller writes: "These new "industries" involving various combinatories between themathematics and the psychology of finance have long troubled a Marxism that—with some brilliant early exceptions,including Dallas Smythe, Guy Debord, and Jean Baudrillard—was inlarge part capable of only a rudimentary, quasi-Newtonian conception of the commodity-form
as object, and thus of productive laboras remunerated work. We saw in the last chapter the pathways of networked emergence beyond these subject-objectparadigms. The Newtonian conception of the commodity only as object (a form that, as I tried to indicate in the previous chapter, was itself a derivative on the underlier "exchange-value," though not understood as such) was relatively unable to perceive the incipient networking of either the commodity-form or of its composition by networked forms of productive labor, some remunerated and some not. We might even say that it was this relationship of risk to liquidity spanning social production and reproduction networked by money that Marx was trying to explain."

The establishment of a valuation field already presupposes the emergence of metrics and, over time, causes the emergence of new metrics of both measurement and extraction. In the form of ratings, "likes," financial derivatives on volatility, and algorithms of analyzable metadata, currencies are created, and the measurement of "affect" is an instrument of financialization and calculability. The transformed status of labor, now as affect, attention, cognition, somatic function, virtuous ability, and metabolism, requires a higher order of abstraction that is generative of information. This work is rewarded with new forms of currencies – *social currencies*.

Traditional Marxism continues to insist that only the object is to be conceived as a commodity and that something that is not an object cannot ultimately take the commodity form. However, the digitally composed derivatives of synthetic finance contradict this idea of a commodity object, and one can now say that the object is a node in a web of relations or an interface with the sociality that appears as an object (the node-ness of an object is a composed position). Similarly to Negri, Beller speaks of the transition of the singular commodity object to the dispersed and distributed commodity (the digital object), the transition from the movement of factory production to the distributed production of the network commodity in the social factory. Industrial production creates commodified objects in the factory that are sold in markets, while distributed (digital) production creates digital objects that are effectively derivative "objects" in the imaginary and social factory network and are sold in attention markets. The new distributed image-objects are inextricably linked to franchising, platforms, brands, and other modes of associative transmission. Owning a part of a network, whether as

a share, infrastructure, or token or even a "commodity," can be defined as a network derivative because it provides a return on an underlying asset, namely the traffic that is the benefit of the network as a whole. A commodity is thus a part of a network of relationships – a node or, in normal parlance, an object. But in light of today's digital composition capability, even the traditional commodity object is a derivative, a structured, composable position on the tradable exchange value, its base value in the market. The tofu is an interface with the Monsanto platform, its instantaneous price a specific bet on your net positive cash flow.

The derivative commodity, like the products of synthetic finance, has a risk profile. Indeed, it can be argued that the derivative was always implicit in the commodity-from the moment its dual identity of use-value and exchange-value was postulated by capital, it was in effect a social relation priced in: The production and purchase of a commodity was at all times a calculated risk, and its price was a price on all knowledge compressed in its information. Its information signaled the potential for transactions, and in principle, all transactions affected its information. The intensification of capitalist production means the multiplication of the forms of risk and risk management strategies.

In the same sense that in Newtonian mechanics, the displacement of an object is a derivative of its velocity, the price of the commodity as an object is itself a derivative of the general motion of capitalized object production. In Fisher and Scholes, the volatility of price was formalized (and itself priced). One paid to secure a future price for x in a volatile market, and the price paid was a hedge against volatility, a liquidity premium.

We still speak of three classes of economic objects: Classical commodity, credit, and derivative, whereas with respect to synthetic securities, we still speak of derived objects, of derivatives. Suppose the production/circulation of a physical, economical product (classical commodities such as clothing, food, computers, etc.) is directly afflicted or initiated by credit, and this, in turn, can be massively influenced by the price of its synthetic replicant (derivatives). Can one really maintain the previous hierarchical order of the three classes of economic objects? A table may be a thing for providing a meal, but when factors such as interest to be paid on the loans of the company producing tables, options and insurance on the price of wood, and finally currency fluctuations are superimposed on the corresponding factors in production, and this in the context of the production of further goods and services, a global banquet of monetary capital is nevertheless placed above the extremely modest table (as a physical object). The prices of classical commodities are now closely correlated with the prices of financial assets so that the prices of classical commodities cannot be determined solely by the relationship of supply and demand and the necessary social abstract labor time. Instead, the increased riskiness of investing financial assets enters into the price determination, and this relates to investors speculating on diversified commodity indices.

Correctly, Beller considers the strict distinction between circulation and production questionable. The network of circulation multiplies interfaces for the occasions of value production. Networked relations have long colonized the social field, creating "digitality" and the "social factory" and maximally extending the workday to a near-total occupation of life. This condition – in which network commodities function as network derivatives and invade the semantic field so that virtually all social activity is dedicated to maximizing the return on

capital, however small – describes the medio-logical shifts necessary to bring about the post-Fordism of Autonomia Operaia, Foucault's "entrepreneur of the self," and Randy Martin's "financialization of daily life." The computerized mode of production leads to the "derivative condition." An important interface here is the programmable image.

The development of options (in commodity trading, fashion, and finance) allows buyers to make a "bet" on the currency of their own reading of market value: their "wants." At the same time, the construction of options integrates the realm of the society as a vast space of innovation, a space for the production of new needs and for arbitrage. The space-time and virtuosity of the social factory: Google, nanotechnologies, satellites, drones, fiber optics, hedge funds, ambient computing, algo-trading, cryptocurrencies, and the like operate the myriad options so that the products of the social factory can be efficiently distributed and consumed to further produce capital.

The digital metrics, media of risk management, which are also modes of extending the logistics of quantification and valuation, emerge directly from the new distributed forms of commodity production in the social factory. They extend the logic of the market and the cultural logic – part of their "meaning" is that they are themselves tools for navigating capitalist culture, i.e., risk. Ultimately, they require the relocation of exponentially more complex trajectories and calculations of capital into discrete-state machines' nano-second operations.

Marx writes that things that are not in themselves commodities, such as conscience or honor, can be offered for sale by their owners and thus take the form of commodities qua a price. Therefore, formally speaking, a thing can have a price without having a value. The expression of price, in this case, is imaginary, like certain quantities in mathematics. On the other hand, the imaginary price form can also conceal a real value relation or a derived price form. Marx's comparison of the relation of price and value with real and imaginary numbers says that a price/value can be "real" or "imaginary" and treated according to mathematical rules; that is, it is subject to mathematical operations that lead to practical results.

It is worth remembering that the use of imaginary numbers developed by Leonhard Euler in the eighteenth century and by Carl Friedrich Gauss in the nineteenth century predicted the Higgs part's existence. Whether da Higgs part is real or not is somehow beside the point, since mathematics mediated by the technique of its own design stages "nature" to produce mathematical effects that are inherently consistent-verifiable. (The derivation of value is both a tool of measurement and a means of production in finance.) Mathematicians use imaginary numbers to generate real solutions. No doubt these solutions work, but as Gödel and Derrida have shown, internal consistency here is not "truth" in the classical sense.

But one could also refer to Laruelle at this point. The generic method operates by extracting a minimum invariant from the various scientific disciplines or philosophies, such as the imaginary number from calculus, the wave from quantum physics, the transcendental from philosophy, capital from economics, and so on. These invariants have to be superposed, or, in other words, they have to be introduced as theoretical givens into the mode of superposition.

Beller now rewrites the general formula for capital as M-I-C-I'-M'. M, of course, stands for money, C for code, and I for image/information. The code here is not a stable entity but a

discrete moment in the movements of a computer's discrete state – we could say all networked computers and the world computer. Replacing Marx's commodity "W" with I-C-I′, we register the sublimation of the commodity form by the matrix of information. In the formula M-I-C-I′-M′, the expanded notation I-C-I′ represents the integrated, productive activity formerly denoted by "C." The network commodity's image-code replaces what was formerly understood as a commodity. In an extension and Marxification of Flusser's notion of the universe of technical images, Beller shows that in Digital Culture 2.0 commodity production, is mediated by images; data visualization is a transaction in the movement from money to image code and back. It is a networked process of vectorial connections.

In reality, I-C-I′ may entail many iterations and determinations; they are permanent changes initiated by attentional, cognitive, metabolic, or other types of inputs. Suppose we hold these types of inputs for a moment. In that case, it appears that recycling can occur anywhere in the circuit or network as it processes between mouth M′ and the interval indicated earlier by the commodity 'C.' That is, at any moment along the circuit from monetized capital investment to monetized profit, a value-producing transaction is possible, each movement or change generates new data, and each new state is a potential interface with productive labor, affect, and attention. Access to this data can be priced. Automated "labor," that is, labor performed only by computing machines (or even ordinary machines), is always machine amortization. Machine amortization is also a cost of production, but it is not a source of profit for Beller. Here Beller avoids the question of a machinic-surplus.

Production today is often distributed across multiple locations: for example, hundreds of thousands of software authors, tens of millions of historically devalued (mostly female, mostly Asian) hands, billions of screens operated by billions of operator-functionaries. In a nutshell, therein innovation is merely arbitrage on the cost of labor per informatic bit. Commodities, now fully algorithmic, are seamlessly linked as use-values and exchange-values and as the realization of use-values as the means of producing further exchange-values through the legal and practical organization of proprietary pathways along with the vast database of the world computer.

In the movement from factory to social factory, commodities no longer need to be materialized in object form (these "commodities" are now combinations of brands, images, franchises, and other financialized informatic-semiotic vectors); they exist and are produced as integrated price-assemblages. Some of what is bought (by us) and done with our screen time are the use of the platforms themselves (their utility is our payment, our social currency), but, as the branded self and fractal celebrity show, utility and logic enter into a common bond via the domain of a particular platform, composing together with the cultural logic of computation. The branded self, fractal celebrity, and other platform affordances are part of the control exercised through "digitality as cultural logic." Beyond what we receive some consideration for in social currency, the rest of our work is also sedimented as data. It is absorbed, collected, captured, scraped, accumulated-in short, stolen through the primitive accumulation of metadata-and then bundled and sold to investors, shareholders, or advertisers or confiscated by governments, police, and intelligence agencies. Our modification of the discrete state of global computing is remunerated by labor or performed gratuitously as dispersed life activity in "soft" social currency: Viability, know-how,

stupefaction, connections, likes, etc. – generated modifications of what Beller calls the code, generated by our use, indeed by our inhabitation, of networked media machines…

For Beller, technological logic is a carceral logic of enclosure, a settler-colonial logic that posits consciousness as a standing reservation. Communication is theft. The institution of consciousness is a product of theft and a form of theft.

The number and type of intervals from M to M′ have an exponential extension. The complete rewiring of space-time and semiotics – at all operational levels, and through the concise style of the protocols of a unified operating system with the infinite digits of AI, drives out old-fashioned metaphysics (as well as the old world itself) by employing methods of branching and incorporation through enumeration, the assignment of numbers to any quality. The computational mode of production has become deeply involved in the world. The general procedure required to get from M to M′ is now the recursive loop of the image-code of computation. The image as data visualization is both processed and manipulated – it is a construction site for code modification. Although we should perhaps say that information emerged from the image of the commodity, we can now say that the image is an aspect of the information. Reading a text, very likely on a screen, is a special case of image processing, and even if one reads on paper, the character of the medium of paper and what appears on it is radically altered by the media ecology in which it now finds itself. We connect to images and are perceived as images by both psychic and machine technologies.

Derivatives in the context of financial transactions open up spaces of a transaction within a transaction (transactions that can themselves be bundled and sold, as in the price of euros into dollars or in the securitization, tranching, and resale of home loans). The derivative's logic is a calculus of multiple transactions that reduces a complex process to a price. The financial derivative becomes a way of organizing and structuring information based on the probabilities of a set of possible variations in a structurally bounded informatic matrix. That the price of risk with respect to a particular financial event adjusts from moment to moment demonstrates both the usefulness and the limitations of any predictive model. Similarly, LiPuma wrote in his last book that the exchange value of the derivative is not at all a function of abstract labor but rather the expression of a social abstraction (of risk) generated in a given time interval. Moreover, the value of the derivative is based on the information and the terms codified in the contract; it is not in a commodity-based on abstract labor but in labor required to establish the interconnectivity of capital circulating globally. Understanding the instrumentality of the financial derivative, which can be used as a speculative instrument or hedge to guarantee a return, allows us to think further and note with Beller that even advertising can be considered another instrument of risk management. Just as the financial industry applies mathematics to psychology, the advertising industry applies psychology to mathematics to indicate to investors its own legitimacy and productive potential and bind the psyches of consumers to advertising.

Moreover, in advertising, the "bet" on the effect of market forces depends on the formalized (and increasingly algorithmic) organization of the psyche and semiotics through the programmable image. These new "industries," working with various combinatorics between mathematics and psychology, have troubled only a few brilliant exceptions in Marxism, such as Dallas Smythe, Guy Debord, and Jean Baudrillard. Larger parts of Marxism stuck to a

rudimentary, quasi-Newtonian conception of the commodity form as an object and thus of productive labor as remunerated labor. Perception, desire, imagination, and the like, the faculties that Beller attempts to describe as the basis of attention theory, played little role in labor-value Marxism. Comparing these two "industries," derivative finance and advertising, which securitize differential complexes of M to M′, shows that risk management and risk management techniques account for the vagaries of subjective actors and intersubjective social dynamics by creating a spread. Derivatives fill a period in which wealth is created as a consequence of volatility, as a dispersion or spread of what they represent as an imaginary center of spreads. The design of the derivatives shapes the leveraging of this volatility, convexity here, meaning that the variation in the price of the underlying and that of the derivative need not be symmetrical. A variation in the price of the underlying can lead to a disproportionate variation in the price of the derivative. Thus, a small variation in the price of the underlying can lead to an enormous increase in the price of the derivative; recall that in the subprime crisis, a small number of defaults led to large losses for the CMOs.

Derivatives are instruments priced to manage volatility, calculi of informatic capture networked through screens and consisting in various types of contracts. They are nothing less than new techniques of capital for the "harvest" of general wealth. As such, they are already inherent in the plantation, the factory, and the deterritorialized factory of mass media. The plantation had institutionalized slavery and the whip. The factory added the imperial state, its police, the clock, and social media added delirium, frenzy, generalized psychosis, metadata, and the screen. Cotton and sugar required different methods than washing machines and automobiles. Images also demanded a reconfiguration of the protocols of organization, control, and value creation-all marked by economies of scale and rising market volatility bifurcations of inequality. For Beller, monetary media and the development therein to structure credit/debt and social media are convergent with the development of new metrics of attention and attention markets; they function via computation and are thus economic media. Economic media here means the convergence of monetary and semiotic media as computation, orchestrated by the world computer of racist capitalism. The illiquidity of most of the planet today ensures the liquidity of the financial world. What is ultimately managed and subject to power is access to liquidity.

One Facebook "Like" was reported to have a dollar value of up to $214.81 in 2013. Facebook has subsequently introduced more and more options and algorithms to make users' advertising desires more visible and their attention more granularly monetizable. In general, the mere touch of a pad or screen leads to a change in functionality, spawning new access, connections, and information, and increasingly so with money. New metrics of "value capture" are everywhere. Facebook today is looking to launch Libra, a cryptocurrency that will allow unprecedented access to the financial practices of billions of users.

Even the Indian farmer, who is subject to the volatility of price fluctuations in the world market, becomes a portfolio manager in terms of his crops. Instead of growing for the local miller, each crop represents for that farmer a position with respect to the world market, i.e., each crop is exposed to volatility, and growing several different crops is a way of hedging volatility. Thus, what appears to be the most traditional of activities can be understood as simultaneously financialized and informatized. For Beller, growing a particular food is nothing

more than starting a program in a world of programs.

For Beller, semio-capitalism, similarly to Bifo Berardi, posits the generation of meaning/language and financialization; it "arms" meaning and brings it to the market. We pointed out in *Capitalization Vol. 2*, on the other hand, that it is problematic to link financial derivatives to language since they are structured by a set of a-signifying semiotics (Guattari) qua charts, numbers, and other mathematical tools.

Information as "image" and "meaning" opens up ontologically prior moments for new and networked processes and processing in the world computer. Azoulay's conception of the meaning of a photographic event as "infinite" draws paradigmatically on the distributed exchanges now taking place in social media: Azoulay offers a theory that presupposes the complex relationship between image, sign, and number, one that helps us see that the anatomy of social media is in fact key to the anatomy of photography. And photography today is also a derivative whose underlying is the ephemeral reality, which in turn is the basis for the exposure of contingent claims. The change of its rules of composition changes the exposure to the risk endemic in such a case. This is to say that photography exists in a network. At this point, Beller again refers to Randy Martin and his understanding of a social derivative that allows one to navigate a kind of volatility and risk something together to get more of what one wants, a "bet" on volatility that can, however, come from the subalterns. The photographer has always been a node in a network of indeterminate specifications. But reconfiguring the network, rethinking the ontology of the photographic image and of photography as a practice, Beller argues, could also mean reworking the practices that result from it, and thus abolishing the reel abstractions created by technical images. With photography, that is, an intervention in the vectorial movement of I-C-I′ (image-code-image′) that performs the production of I′ within a certain range of statistically predictable parameters, parameters determined, for example, by Zionism, settler colonialism, military-industrial power, vertical financial integration, and the art world, an interruption of the G-G′ circuit is also possible. It is an interruption of the seamless flow of data, a crisis of valorization, a "hack."

Historically and currently, the camera marks a threefold abstraction from reality: from the hand-rendered image (cave painting turns four into two dimensions) to the written line (hieroglyphics, which rupture the two-dimensional image and make it one-dimensional, that is, linear, into the written line) to the materialized calculus of the photographic apparatus (linear alphanumeric writing, including mathematics, optics, and chemistry – extended into matter as a program for producing photographs). Through the production of "technical images" by means of this triple abstraction, photography fundamentally alters linear thinking, as well as the structure of time and thus the relationship between history and reality, so that man is programmed into the domain of the programmed image, "the universe of technical images." Technical images are themselves the product of the automated thinking of programs that abstract the world via thinking in numbers. The photographic is not a window on the world. It is programmatic information. Billions of cybernetically networked camera automata today drive the program of the camera, producing the dissolution of linear thought, linguistic mastery, and the subject form as we participate in the autonomization of photography. The photographic program is photo-capital, an emergence of the world computer.

With the consolidation of image, code, finance, and state power, today, the priority of image

and user is completely reversed, as the human sensorium becomes the input device for the command control function of computation, while the human body becomes the avatar of the algorithm. In the future, some humans will have the "job" of presenting robotic assassins with ethical dilemmas for robotic assassins.

For Beller, data processing's cybernetic ramifications indicate new productive interfaces for both the "observer" and the "observed" at different scales. Most of what we see, what we process, and what we do today is informatic labor for computational capital: we are inscribed in and through the computational mode of production. This logic, though hard to see, is, in fact, quite rigorous. However, it appears to most as chaos that can only be recognized as partially organized by, say, atavistic drives. The functionalism of the social and the failure of a different sociality are among the results of what Stiegler calls a proletarianization of the senses and of the associated short-term thinking and is the cause of what Berardi diagnoses as burnout, depression, and the psychopathologies of the present.

For Beller, the free-flowing sovereignty of neoliberal capital subjects as modularity, containerization, and sequencing emerged on the one hand from the practices of slavery, colonization, and ghettoization; on the other hand, it refines such forms of domination. For Beller, the racism of neoliberalism is always only a small step away from fascism.

Beller no longer recognizes a clear distinction between technical image and code and aims to show that the complication is endemic to computing machines and thought history. Software is ultimately inseparable from the media environment in which it functions and therefore has no rigid boundary or discrete essence. The instances of data visualization of cybernetic computation are "moments" in the expansion of the universe of information. Taking this logic of embedding and embedding logic to its extreme, Friedrich Kittler has infamously declared that there is no such thing as software because everything ultimately reduces to voltage differences. More precisely, he claims, there would be no software if computer systems were not surrounded by an environment of everyday languages, i.e., computers, like other media, are always metaphor machines. And so Image-Code-Image′ (written as I-C-I′ in the formula G-I-C-I′-G′), like the commodity "C" before it in M-W-M′, is also a kind of hypostasis-a discrete moment in the instrumentalized flow of the world. Variables I and C, always marked by other variables, are networked moments in the flow of information mediated by quantum hypostasis, i.e., points of networked interfaces. These mediations, which can be abbreviated as M-I-, where "I" is information, can be performed today either by machines or by humans by means of sensory, affective, attentional, cognitive, or metabolic work, and they can always be networked. For Beller, the M-I-GM flow can be captured by a discrete state machine and represents the most concise and general form of networked production and reproduction of computational racialized capital.

Then, the screen image cannot be definitively separated from the code that renders it, nor can the current organization of visuality be separated from the code/image. The Mona Lisa, either in the Louvre or on the screen, is no longer just a painting; rather, it is a node and interface in a vast informational network, just like any subject itself. The environment of everyday language that "surrounds" the software is part of the software. This colonization of language and image indicates the transformation of "human" interests into G′. For Beller, this is the real subsumption.

Given the dominance of images in all social spheres and the complete digitization of images and their subsumption under the regime of capitalist informatics, it becomes clear that computational production on the various digital treadmills becomes the general form of productive activity in the interval between G and G′. Like rats (but unlike them, constantly narcissistically ascribing opinion blooms to themselves on the platforms), we turn the digital gears and grind out discrete states of affairs. Through our negotiation of images (attentive, distracted, psycho- or neurological, semiotic, metabolic, unconscious, etc.) and the depicted, we maintain code without knowing it. Seeking screen-mediated sovereignty, the power of the programmer, we are embedded in the network of computers, constantly performing calculations without knowing it to keep feeding the programming. We are information substrates trying to manage the algorithmic set.

As Flusser notes, today, all activities are geared toward being photographed. Everything is a means of photography, and meaning is given by the camera. The photographic apparatus thus subsume human beings, and we move in what Flusser calls the "universe of the technical image" and what Beller calls the "media-environment" or the "world-media-system." Unlike Flusser, Beller understands the program of the technical image as functioning extremely predatorily in a racial capitalist mode, as an extension of the capitalist agenda, of capitalist mediation, and thus of the logistics of commodification and remuneration. In other words, the programs that bifurcate the visual not only set up a logistics of appropriation, but they also establish exploitation that constantly threatens and actively seeks to transfer all wealth to capital through a radical overdetermination in relation to our practices and potentials.

Flusser is aware that cameras represent the world as information. For the eye, the information processing is usually no longer visible. Even if time is slowed down by a factor of 40,000 in a stock market transaction on a graph in real-time, the transactions are hard for the eye to follow, let alone explain. And that's trading just one share. The number of transactions taking place at the speed of light shows that computation, communication, and financial speculation have become one and the same movement. These integrated functions operate algorithmically and do not lend themselves to actionable representations; thus, they seem to effectively short-circuit the visual domain and, perhaps even beyond that, human cognition. Information is a derivative of the image, which in turn is itself a derivative of language. Beller speaks of machine cognition orchestrating visual and linguistic cognition for billions of successive machine cycles. As if to confirm Virilio's thesis in Speed and Politics, it is understood that the transgression of conventional constraints on space-time through regimes of abstraction is a means of exercising power within conventional space-time.

In the industrial age, a company monetized the spread between revenue and the cost of a technical upgrade to increase efficiency, so it took a risk at an appropriate time and then invested in new technology. After investing in new and more efficient technology, it costs less to produce one unit of x, and the company can profit. The company can take advantage of this by selling at a price close to the old price, at least until the technology is generalized and the market price of x falls to its true average cost. But today, spreads are more complex. The basic structure motivating innovation remains arbitrage: through innovation in production efficiency, the producer "buys" production of the good for less money per unit and sells it in a world market where the knowledge materialized in the innovative new machinery has not yet

percolated globally to all producers. From this, we see that the price from the buyer's perspective is a derivative of the knowledge that includes an assessment of the risk, the exercise of an option. When the innovative knowledge has percolated throughout the system, things tend to equilibrium, and the "law of one price" applies without arbitrage. Capital will always move to where the rate of profit, and thus the degree of vertically integrated exploitation, is highest.

Systemically, the result of this arbitrage is the general rate of return – the interest rate on G. So what is sold in the financial markets are, among other things, options on the command over labor and time, over metabolic time. Going from G to G′, realizing a monetary interest means being able to buy more and more metabolic time for the same money. In doing so, the price of metabolic time must be driven lower and lower so that the necessary labor (the labor necessary to cover the cost of the worker's survival) takes on a smaller and smaller share of total labor time. The various industries and platforms compete in such a way that they bring future metabolic time to market at the lowest price.

Beller pointed out:

- Stealing the lives of screen users.
- Stealing the lives of targets.
- Signing populations to increase the national debt or the sale of weapons.
- Strategies to generally lower the living costs

The "users," the inhabitants of the world computer, will bear more and more the burden of the reel abstraction and generally have less and less to expect.

Competition between the various capital innovations of networked extraction and valorization and specific code applications further lowers the average price of life. Carceral societies, occupations, settler colonialism, encampments, dispossession – these are not structural anomalies of digital capitalism. Rather they are the sustaining outcomes of finance capital and, as such, are not just the backend of financial derivatives but props of computational racial capitalism.

Beller first introduced the term "cinematic mode of production" in 1993 and came to four conclusions:

1. Cinema brings the industrial revolution into view.
2. To look is to work.
3. The attentional theory of value actualizes the theory of value.
4. The asymmetrical (exploitative) exchange takes place vis-à-vis the screen.

The Internet as a means of production is now both a precondition and a paradigm for the screen-mediated social factory. Attentional labor or metabolic time can be conceived of as informatic labor. It should come as no surprise that intrusion into privacy and imagination are parts of the new conditions of social production and reproduction.

What we see today is the advance of an increasingly granular grammatization of attention and of nervous processes that extract what becomes necessary work in ways that are no longer remunerated in the traditional sense. People are fobbed off with likes, endorphins, social know-how, and other affects, being rewarded at best with celebrity, affiliation, power,

and intimacy. It seems that the money form and social recognition are also becoming convergent; celebrity and the brand are beginning to articulate each other insofar as one translates into the other, both increasingly liquid assets. Platform-based and network-based currency purchases are now also forms of gratification. This is also where Beller sees the prototype in the social sphere for what the rise of cryptocurrencies is all about. Cryptocurrencies are a new medium, both a form of money and a social network. As with the relationship between money and information, it seems to us that the convergence thesis is not substantiated here and should rather be differentiated, and reference should be made to the intertwining of the terms.

We now permanently enter a technopsychic landscape, seeking risk and reward for our invested capacities. We are now increasingly familiar with the various cognitive subtypes that, with varying emphases, attempt to couple the capitalist convergences of labor and play, immaterial labor, attention, prosumer, cognitive capitalism, semi-capitalism, virtuosity, neuropower, and so on. These terms represent the labor we risk, the commodity we offer in the volatile market of employment. Less well known is the convergence of wages as money and recognition. Both become iterations of the general equivalent and thus interchangeable for human time, quantified and qualified tokens offered to us in exchange as compensation for our efforts. Here we begin to see the financial appropriation of expressivity and also the possibility of a radical form of finance as a medium of expression.

Stiegler's work on political economy and dispossession points to the "grammatization of gesture" by industry and of audiovisual perception and cognition by what he calls "retention systems," or media technologies. This grammatization of perception and cognition through media and platforms harnesses the libido and brings about the "proletarianization of the nervous system."

The formula G-I-G′ implies the convergence of information and advertising, an alignment of interests. In view of the postmodern intensification of the disappearance of the referent of the sign, it can be said that everything advertises something else and thus also itself. This pithy formula could be further reduced to a precise deduction of what is nothing less than post-Fordist societies' ruling imperative.

From the standpoint of capital, the role of surplus populations is reduced to serving as substrates for image production and semiosis; not only in factories, cottage industries, subsistence agriculture, and informal economies, but also as starving hordes; "irrational," criminalized, or redundant populations; subject-objects for bombardment; desperate refugees; and even voids in the idea of the world – sites of social death. People are coerced (via discourse and screen) into organizing military production, national politics, internment camps and prisons, civic imaginaries, museum exhibitions, corporate strategies, and market forecasts. This erasure and disposability imposed by systems of inscription that absorb all production of meaning is also an achievement of advertising endemic to racist computer capitalism. The argument is that in the context of virtuosity and the expropriation of the cognitive-linguistic moment by racialized computer capital, sociality itself has become advertising. This situation represents – indeed enforces – a derivative logic, a logic in which every action is a hedge, a kind of risk management designed to maximize a return. In addition to the fractalization of fascism, in which action manifests itself as a profile that has

aggregated the attention of others, advertising has long since invaded the image and data visualization. All signs become points of potential cathexis, derivative positions on an underlying value that is social currency and ultimately value. We work on the words and images, but as numbers, they belong to someone else. The media themselves have become forms of capital, and our use of them means that we are working on the creation of value that valorizes capital.

Even the non-computable and the impossible are to become computable by drawing them into the realm of mathematical calculation, while the incomprehensible is made rational and thus social, this being ultimately economic – this not only concerns science but marks the path of racist capitalism towards computational racist capitalism. Treating life as a calculable program, being as a number, this transference of quality into quantitative reason is achieved precisely by treating qualitative forms as information. Such treatment requires that diverse and manifold phenomena, even still the manifolds as heterogeneous, disjunctive, and differential complexes of singularities, should be rendered as information. At the same time, there are many risk management strategies to externalize noise and exclude contingencies and undesirable events naturally using a cost calculus via strategies that incorporate the costs of policing and preemptive policing.

Beller calls the price a calculus. The imposition of content indifference is a condition for its function, the transformation of qualities into quantities so that the world becomes calculable. Even modern sociology, which today is supposed to be an economic theory, is embedded in an economic system, or, to put it differently, sociological theory is an economic model modeled by economics, far from being antisociology or differentiation intervention. The dominant theory is a map that stands for a territory, and it includes calculations that must be productive for capital, even as discourse. All the more so when computer science and social cybernetic practices that process in real-time are in play. Economic theory, from the spectrum of disciplinary economics to corporate policy, becomes part of a large-scale value extraction strategy undertaken from the social body. Theory itself has been colonized by the logic of financial optimization, which means monetizing the constantly updated result of a series of experiments performed on the social body. Theories, be they academic, governmental, or corporate projections, act as both engine and camera, that is, they are not only representations that provide interpretive scripts in the form of abstract concepts, but they are often also data visualizations, index, and thus a programmable image. Theory is, in a sense, a camera. It is a machine that functions through practices of abstraction and produces practices of abstraction. Discourse becomes a subroutine of the image, which is a subroutine of computation, which in turn is a subroutine of racist capital.

The camera, in turn, is also an engine, for an undeniable fact of the contemporary epoch is that in Flusser's words, "cameras organize the world for the benefit of cameras," or, in terms of Bellmer's world computer, the entire matrix of representation is instrumentalized to ensure the production of surplus-value through the networking of the extractive interfaces of media infrastructures. The machines of abstraction create cuts and bundles, images and algorithms that are both programs for labor and derivatives on labor. They network commodity production and enable the extraction of surplus value at the interface. At the highest levels, it is the financiers and state leaders who write derivative contracts on entire peoples' future.

For Beller, the evolutionary path of information, its indifference to content, its quantities, its predictability are one with racist capital. Beller summarizes: 1) Information emerges as an expression of the value-form. 2) Information theory pursues the "content-indifferent" imaginary of capital. 3) Information is a means to price, which is itself a derivative of knowledge. 4) Information is the fourth determination of money (in addition to measure, medium of exchange, and store of value).

It is an ongoing calculus of financial risk that has a price, indeed is a price, and transforms all prices into derivatives on knowledge: even externalities, the various forms of mutilation and social death (Wilderson) are part of the calculus, part of the calculus of what is always considered social calculation. The codification of race, gender, nation, and all forms of difference is no longer just the business of marketers or algorithms; it is part of a totalizing system of over-coding that enacts a distribution of probability and a general calculus for the cost-benefit analysis of all possible forms of violence.

Therefore, it is not too far-fetched to imagine that each individual's relative social power on Earth can be expressed in a single number (its price), and if there were a market for such an index, it would be used. In reality, such a price would be a range, a range of values (a moving index).

For Beller, the movement of information is not separate from price:

- It is itself a price movement.
- It is the result of financial transactions.
- It will form future transactions in accordance with a price calculus.

Indeed, information is to be understood as a series of state computational changes within a series of discrete transactions, divided into ones and zeros (discrete states) that convey something but are, in fact, financial transactions. In this sense, information is literally a derivative of knowledge – its cost is a premium paid to maintain liquidity.

Beller remains rather vague in the determination of the relation between information and price. Sometimes he speaks of both as calculus, then he integrates the information into the movement G-I-G, then he speaks of the dominance of the information, then of the price as derivative. If the information replaces the commodity in the formula G-I-G, then it is still an equivalent of the commodity, which must be realized in money, not money itself.

Let us come to our conception of the derivative: In the case of the derivative, which is not a commodity and has no transparent value in the here and now (for us, the derivative is also not money, but speculative capital), the only measure that motivates the transaction is the calculation of its future value. The derivative aims at a future, and it can only be priced out because the market participants assume a bid-asked spread, insofar as they reach agreement on the net value of the derivative, but differ in their expectations and speculative calculations on the future value of the derivative. Omitting the risk counts only quantitatively, as a calculation of a price that is assigned a number. In this process, risks are separated from the conditions of their realization, and this has certain implications: Risk can now be defined in terms of volatility and measured as the probability of the relative variance of the derivative price. Volatility is itself measured into a logic of production. Derivatives now capitalize on the

volatility they actively create. If a commodity is sold even before it is a worldly thing, then derivatives infiltrate circulation into production precisely by ascribing floating and contingent values to the commodity. To speculate on a commodity-driven by the derivative (real estate) is to speculate on the spread between the directionality of prices and the spread produced by the derivative markets.

Thus, the derivative's exchange value is not at all a function of abstract labor but rather the expression of a social abstraction (of risk) generated in a given time interval. Moreover, the value of the derivative requires information and the conditions codified in the contract. It is not in a commodity based on abstract labor but in the labor required to establish the interconnectivity of capital circulating globally. Unlike markets hypostatized by financial theory, current markets constantly recalibrate prices. In fact, there is no price as the spread between ask and bid. This spread must be continuously reconciled if markets are to exist at all and remain liquid: The market price is the input, not the output, in every conceivable pricing model. Traders continuously overwrite the market in ways that the models are incapable of capturing.

The objectifications are present in socio-economic structures, which in turn are shaped by the financial markets: The derivative, the market, the logic of speculative capital, the financialization of households through debt, the appearance of risk as social mediation, the existence of new forms of temporality, an increasingly abstract form of structural violence, the dominance of circulation over production. Financial markets use all these structures to monetize images, information, currencies, and assets of all kinds. Constitutive of this economy today, then, is the circulation of speculative capital, moreover, the use of the new information technologies to shape and accelerate the flows of capital and, finally, to advance the technologically assisted production of knowledge that informs market participants in their decisions to trade speculatively and globally, around the clock. Liquidity is often used as a synonym for the social relations that allow agents to construct the collective enterprise.

Back to Beller. Wherever information interfaces with the market, monetization takes place; it is market analytics that turns the cost of information, and thus specific instances of information itself, into derivatives on underlying knowledge. Whether it's an Instagram post or a YouTube video, information is the derivative on any process. Information puts a price on everything, and the cost of any index can be calculated in relation to the totality of information and social totality. So to log information is to program money. To put information on platforms is to program money to do certain things within certain conditions. Programming: the organization of resources to make cybernetic machines perform actions that predictably govern other cybernetic machines to structure a risk position in the market. We invest in data collection of sunspots or faces. Digitization can now be understood as financialization through the transduction of the perceptual world into information, exploiting informatic capacities for the quantification of qualities and the harvesting of human expression in all its forms.

In addition to the potency of money to colonize semiotics and all significant social activities, Beller shows that digital instantiations of information also serve as sites of labor, sites of extraction-as programmed and programmable images. Money as a measure, as a medium of exchange, as capital, and as a programmable form – in other words, money as an informatically qualified instance of value. For Beller, the rise of the digital develops and reveals

the fourth determination of money as information. For our critique, see above.

Information processing is the extension of the calculus that goes on "behind our backs" (Sohn-Rethel), the reel abstraction that results from the practical activity that is our exchange and our frenetic transactions. This exchange used to be thought of purely as a financial transaction, but the colonization of representation by information extends the financial transaction into the semiotic and metabolic, grafting all the activities of social life with money. The great advances that benefit some sectors are at the same time practices of barbarism that enforce for their acquisitive expansion the deeper separation of people from their product, which is ultimately the world they make. Any qualitative expression quantification, whatever it prices out in real-time, involves options on an underlying knowledge: Options to sell in capital markets. The optionality of money induces its volatility, which is its information processing, though this remains tied to processors: social agents exercising options are the real substrates of calculating racist capital. For Beller, however, it is also this fourth determination of the already media-bound qualification and the ostensibly pure quantification of value in which lies an unthought-of revolutionary potential. For information, even if it appears purely quantitative, requires platforms. The posthuman view privileges informational patterns over material instantiation so that embodiment in a biological substrate is seen more as an accident of history than an inevitability of life (Hayles).

Images are derived forms. They are forms of currency. And we work for them and with them. We are market makers and market takers. Structurally, they require stakes of attention in exchange for a return on the social. They are instruments of liquidity and risk. People forget (or didn't know) that even national currencies are really derivatives on entire economies; in our minds, we take the nation for granted and don't see the value of the dollar tied to a set of possible futures. Nonetheless, whether we like it or not, we are betting on a national economy when we hold its currency.

Screens transform into deterritorialized factories, interfaces of value creation and value extraction, and they are mediated by the machine transformation of expression into information. Thus, those of us who would want to express a version of the world or of ourselves, along with those who are forced to do so, become workers in the deterritorialized factories of media. Without the thesis of the interface as workplace, we cannot think the world-historical significance of the rise of screens and screen cultures…

The image is a derivative and also a workplace. The derivative here is an attractor that draws a particular form of attention. As an instrument of risk, it binds attention and other resources to a narrative or image or other structured events that invite risk. In the process, the machines of computational media's informational work are often remunerated to our detriment, or its results are simply stolen. We are all informational derivatives making bets on the social. Some of us cooperate by dutifully consuming images and making posts on social media, some of us sing our grievances in books, movies, poems, and music, others dominate performances and gossip, and some of us try to shut down, log off, disappear, or get sick, while those who control the networks, either through finance, weapons, states, banks, surveillance, or communications infrastructures (all of which are interconnected anyway) wield obscene power while profitably surfing the waves of social volatility with cold indifference, and subject to total impunity with their potentially criminal acts of subjecting any quality, whether it is

yogurt, a gun, or porn, to quantification and computational calculation. With each of our calls for liberation, the rich only get richer. But there is one thing that the blockheads of the new capitalo-financial-fascism do not understand, and they will never understand: "The Other of the Others is always Other." (Eduardo Viveiros de Castro) At least one singularity and that is the revolutionary collective, will always escape and resist the neoliberal plague.

Oppressed by the regimes of representation and truth imposed by financial calculation, from our tranches, we roam the informatic space of gridded images and processed worlds in search of a green New Deal and or a red and green revolution for our attention, our aspirations, our dreams – our creativity, our work. Anyone who claims technology is neutral can easily be identified as a fascist today.

The big authors, brokers, attention brokers, trading platforms of all kinds benefit from our investments, from our efforts (aesthetic or financial) to get a little more out of the precarious global economy. Just as financial derivatives can hedge market direction and trade monetary volatility, social media derivatives can hedge political direction and trade social volatility. For this reason, Mark Zuckerburg's feigned "neutrality" makes him a supporter of white supremacy and fascism.

We provide interest to capital, we provide its liquidity, while we resist expropriation and seek to improve our lot. The qualities of our interests are monetized on attention markets. This is the result of our desire. The algorithmic overdetermination and functionalization of all forms of attention is increasing. The convergence of media formations with computation, so that today almost all media are effectively computer media, also marks a deep and granular convergence with financial calculation – an ever more precise mobilization of the machines and metrics of capture. It is a machine convergence of calculation, finance, and value capture that in turn increases the efficiency of machines and their knowledge: the knowledge and capacity sedimented in and as fixed capital. With the algorithm, with AI, "computational capital" means that almost all social activity is ultimately set in relation to a surrounding calculus of value, with most if not all of the planet's inhabitants forced to play the game from their statistically overdetermined, algorithmically and informatically coded places. The World Computer.

"Computational racial capital" means that the codification of social difference has become an increasingly central component of capital-media strategies of value appropriation. Racialization is also an ongoing process of coding and recoding. Every signal is optimized for profit-taking. Expression has become a hedge, a bet, a play on the spread organized by the volatility of the social; it has become a derivative – a means of introducing liquidity (a certain convertibility of lifetime into social belonging). It is about the management of people and peoples as writing surfaces, as commodities, as quantities, and thus, today, as predictable information. The police do it, the creditors do it, the politicians do it, the schools do it, the eyes, ears, nose, and throat do it.

Like the securitization of home loans by the mortgage industry, which has its own racial logic, bundles loans and constructs tranches and interfaces, the media system cuts and bundles people, composes and recombines social bodies, and writes futures contracts on their various divisions, which in turn are sold on the financial markets.

Platforms quantify information whose substrates are linked via networking to specific capacities and limits for interactivity and convertibility. They emerge, conceptualized here as a social, symbolic, financial, and networked construct, with the advent of computing. For Beller, the emergence of secure, distributed, and decentralized computing, perhaps soon to be collectively held and programmable from below, also offers new possibilities for the subaltern authorship of futures. Today, however, with the exception of social derivatives (language, image, and performance-based bets on social volatility), derivatives are written "from above" and serve as a kind of command-control and predictive market for the entitled, allowing for the adjustment of risk and the harvesting of volatility itself. Stripping away these conditions of derivatives, however, could create communist futures and derivatives for Beller. The response of the masses to the globalization of information as capitalist financialization has been and will be the demand to shape their own future.

Currently, almost all communication is through financialized media, or it is so close to the financial media that it takes place directly in the field of influence and extraction of the financial world. The derivative is not only an economical form but a way of managing risk that arises from a world that is everywhere quantified and dominated by the volatility of capitalist markets. It is a dispositive that makes it work technically, psychologically, and semiotically. For Beller, one must grasp the subtlety of cyberracist capitalism and the sociality of the derivative if one is to overcome capitalist violence. We then extrapolate that world financialization's organizational scale requires that revolutionary politics be at least as nuanced and subtle as the world market and the global integration of production across space and time. Lifestyle choices, even seemingly radical ones, are not up to the task because the market already scripts them, and they are easy to marketize. In contrast, intervention is needed at the level of value creation, aggregation, and distribution, and we must do this with the world-building capacities of expressivity, inspiration, and imagination. It is the operating system of the sociosemiotic that must be changed, the conflation of opinion, expressivity, and finance through the current configuration of media. We cannot continue to allow the rich to reap the volatility, with our precarity and the trillion-dollar bailouts offered to the rich allowing their risk to be dumped on us. Most of the dominant modes of the attention regime – Hollywood, politics, "news," Instagram, and screen technologies – are traffic forms of fractal fascism that pursues consolidation of celebrity at the expense of audiences who, in search of their own forms of social liquidity, become absorbed in the identities of their stars and microcelebrities, film studios, and media platforms.

translated by Jan Heintz

TAXONOMY

CATEGORIES

TAGS

AUTHORS

ALL INPUT

SOCIAL

FACEBOOK

INSTAGRAM

TWITTER